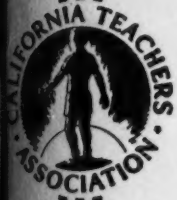


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# California

## JOURNAL OF EDUCATIONAL RESEARCH

Vol. IV, No. 1

January 1953

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PUBLISHED BY

**CALIFORNIA TEACHERS ASSOCIATION**

693 SUTTER STREET • SAN FRANCISCO 2

# CALIFORNIA JOURNAL OF EDUCATIONAL RESEARCH

Published by the California Teachers Association

ARTHUR F. COREY

State Executive Secretary  
893 Sutter Street, San Francisco, California

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The *California Journal of Educational Research* is published at San Francisco five times a year: January, March, May, September, and November. Subscription price: \$6.00 per year; single copies, \$1.50. Student subscription rate: \$3.00 per year. Editorial office address: CALIFORNIA JOURNAL OF EDUCATIONAL RESEARCH, 693 Sutter Street, San Francisco 2, California. (Checks should be made payable to the California Teachers Association.)

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Entered as second class matter at the Post Office at San Francisco, California.

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## THE EDITORS SAY:

### Research Must Recognize Educational Objectives

THE FEATURE article in this issue of the *Journal* should cause research workers to ponder and to ask the question. "To what extent do our efforts contribute to the total educational program?" Although it may not furnish the complete answer, Dr. Leonard's article on "Changing Objectives and Their Implications for Research" most certainly calls attention to possible pitfalls in current educational research. Highlighted also are the needs for more basic research.

We are reminded by Dr. Leonard that educational research, like most of the disciplines, has undergone a metamorphosis during the past two or three decades. But in the process, progress in educational research has not kept pace with advancements in our educational philosophy. Research, for the most part, still concerns itself with "specifics"—more attention is given to the measurement and evaluation of skills, attitudes, and knowledges than to the desirable changes we wish to produce in our students. The result, the author believes, is that education suffers.

It is timely to call attention of research workers to the importance of recognizing educational objectives and to relate our efforts to the attainment of those goals. What are we doing to assist the school in developing sound programs of citizenship training? Can research help to solve the problem of determining how to develop moral and spiritual values in our students? How can we effect a better adjustment of the curriculum to meet the peculiar needs of our school population? These are only a few of the questions to be found in the aforementioned article that suggest a changed emphasis in educational research.

The measurement of progress in learning is a major responsibility of research. This implies that research workers must study curriculum trends, especially those of their community, so as to be prepared to offer guidance in the evaluation of the educational program. The research worker should be a member of the professional "team" that helps to develop the educational goals of the local schools if he is expected to have a full appreciation of the needs for research. Dr. Leonard believes that research workers have the ingenuity and "know-how" to develop the necessary instruments and techniques for the evaluation of our educational goals, if given the opportunity.

The challenge is clear: Are we going to continue to concern ourselves in educational research with piecemeal efforts, or shall we provide direction in determining progress toward the larger goals which eventuate in improved child behavior? In one direction lies sterility and stalemate; in the other, progress and vitality.

# Changing Objectives and Their Implications for Research

J. PAUL LEONARD  
San Francisco State College

WHEN I was a graduate student at Columbia University, "specificity" was the all important word. It referred to the isolation of specific learnings so that objective tests could be built to measure proportions, quantities, or changes in the quantity of a known amount of knowledge. Later years brought the phrase "the whole child" which virtually defies research. Measurement characterized the period of "specificity" and evaluation the latter period. I think it can be said that great progress was made in our knowledge of education in the skills during the first period, and research facilitated this progress markedly, but little gain was made in teaching for synthesis, continuity, understanding or insight. During the second period research has aided but little, partially because research workers rely upon the control of specific variables for valid conclusions, and partially because a good deal of the educational talk in curriculum fields the last ten years has been a mixture of reaction, fear, defense, unlimited generalities, vagueness, and sheer poppycock. If we would profit from research, then, we should first clarify our objectives. Where is it we are going? What changes do we wish to produce in young people? What learnings do we deem important? What emotional and spiritual qualities do we expect our people to possess? May we examine briefly some concerns over learning which should challenge those engaged in research.

## Citizenship Objective

In the last few years, we have become increasingly interested in making good citizens. Recent events at home and abroad have caused us to examine again the basic principles of democracy, the meaning of the American way of life, the climate of democratic behavior, the significance

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*Dr. J. Leonard for the past eight years has served as president of San Francisco State College. He had formerly taught in the School of Education at Stanford University. His earlier professional experience included high school teaching in Missouri, and college teaching at William and Mary. Dr. Leonard has been active in curriculum work, teacher education, and educational research. Columbia University granted him a Ph.D. degree in 1929. The present article is based on an address which was presented on November 7, 1952, at the Fourth Annual State Conference on Educational Research in Oakland, California. The article is being published at the request of many persons who heard the talk at the Conference.*

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of rights and responsibilities, and the meaning of world understanding. Several times during the past 30 years national commissions and a few brave individuals have stated the goals and objectives of citizenship in a democracy. In general, they have been large philosophical principles, hard to corner for either investigation or for the selection of instructional materials. Recently, citizenship projects, like the one at Teachers College, have been financed for the purpose of determining those materials which will produce good citizens. Legislatures, like ours in California, have required that more and more traditional courses in American history and government be taught to prepare our young people for citizenship. New courses in economics and in the culture of other nations have been introduced. Again we have worked on the principle that if there are shortages or new needs we should teach more knowledge courses. That we have been doing this for years to improve the conditions we disapprove has not deterred us from trying it again. Clearly, however, there is concern among our people for greater competency in citizenship, greater world understanding, greater active participation in community living and in government, and greater assumption of personal responsibility for the discharge of public and private duties.

The concern of our people over this objective of education from the elementary school through college should call for a coalition among educators to determine specifically the behaviors to be taught, the content and methods to be used, and an evaluation of the degree of success or failure in the enterprise. Research workers can assist on such projects as the following:

1. A determination of the behaviors consistent with the rights and duties of citizenship in a democracy.
2. A determination of the understanding one needs to read, respond intelligently, and participate effectively in the making of a desirable foreign policy for our nation as it assumes an increasingly important position of leadership.
3. A determination of the relationships that are consistent with the American way of life as they are manifest in human relations in groups—family, business, government, social life—as they affect equality of opportunity for all people.
4. A determination of the characteristics of the democratic climate; that is, the environment in which we live which not only indicates the degree to which we have achieved democracy, but which serves as a laboratory for the instruction of youth and those from other countries who seek to evaluate our way of life.

## Experiences Needed

Success in teaching citizenship, however, is dependent upon more than the selection of appropriate objectives. Proper experiences must be chosen from which our youth will profit and thus acquire the information and skills they need. These experiences are of two types: 1) the intellectualized experiences gained from acquaintance with the culture, the principles, the organizations of our society, and 2) the significant events that follow the development of democracy.

History and government have been skeletons of human organization and experience. As such, without an added factor, they have produced little but temporary factual knowledge. The additional factor essential to success in teaching citizenship is contact with others who share the knowledge but who interpret differently its meaning. Thus is established the vitality of human relations, and they serve as a more decisive teacher than the facts of organization and events. Each child brings to school years of experiences and he adds to them as he progresses through school. Some of the additions are school-centered and some are far beyond its guidance, but effective nevertheless. We are not clear as to the relative effects of these combinations of experience upon the determination of behavior. Speeches have been made on the importance of democracy at work in school and in society, but belief in it is based more upon reasonable assumptions than upon extensive evidence. Some research has given us confidence that democratic practices produce democratic behavior, but we are far short of convincing proof in these areas or in the characteristics of those practices which produce a variety of desired behaviors. Research in the climate of democracy as a factor in developing democratic behavior would enable us to improve the practices in this area. Greater economy of time might also result and if we are to enlarge our objectives, we must either delete some of what we are now doing or be more effective in less time.

While we are investigating the nature of the intellectualized and emotionalized experiences as they relate to acquiring good citizenship, we need to explore the nature of continued growth. Research into sequential learning is meager as is research into the learnings which have to be directed and those which are acquired casually. Can we discover how to begin with young children and to keep consistently in operation through each stage of growth an effective program of citizenship? When is the laboratory of democratic practice most effective? When can it be reduced and more emphasis placed upon the study of principles and functions? What sequences of experience produce an unbroken chain of improvement?

## Synthesis of Knowledge

In recent years there has been considerable discussion about the core curriculum in high school and general education in college. These plans of selecting and organizing instructional materials are meant to improve citizenship and personal stability in group living. They are opposed to the cafeteria or elective system where students would choose what they believed would educate them. Faculty guidance simply added the diverse opinions of instructors to the already multiple choices of youth. The result was little synthesis, and the fact that in justification for this practice faculty members argued that no one knew what should be taught and that integration of experiences around desirable objectives is after all a personal matter, did not improve the practice. Is there any value in trying to synthesize knowledge and experience around carefully chosen objectives over the *laissez faire* plan of education? If there is, what are the characteristics of the more productive synthesizing plans? Is one practice as good as another, even practices as diverse as great books and pupil needs? If we had some evidence in this area, think of all the emotional outbursts and faculty intrigue we would prevent. And, yet, without any evidence, we have nothing more than a mixture of logical arguments, tradition, faith, and power politics to guide us.

## Moral and Spiritual Values

Closely related to the field of citizenship is the area of spiritual and moral values. All agree that youth should acquire certain values but we can get little agreement on what they are. Some would use certain well-defined beliefs a person must follow if democracy and human life were to be deemed good. These values would be clearly stated in behavioral terms, directly taught, and deviation from them would be punished. They would be constant over long periods of time.

Others would hold that values are determined by the expediency of circumstances, they differ by time and place and purpose, as they are resolved by each individual with reference to what appears significant to him. There are wide differences between these two approaches to values in terms of fundamental philosophy. It is doubtless beyond the reach of experimental research to help us determine our systems of values, but once some reconciliation of this matter has been made by common agreement, then we need help in determining the effectiveness of such motives as religious fear, public opinion, and loyalty to personal conviction. How effective are norms in the establishment of values? Can we educate citizens to be rational in politics and authoritarian in values and will these produce personal inconsistencies and frustrations? Are the processes of arriving at value judgments influenced enough by age growth factors to make necessary different motivations at different times? These are only a few of the pertinent questions research can approach in this

area, approach I might say with humility and timidity. The pluralisms in our democratic society only complicate the problem. The relation of values to religious faith makes the answer more difficult. Lack of faith in individual integrity and in the quality of personal choices are factors which research will need to consider if investigations are made into the area of moral and spiritual values.

## Methodology and Research

A number of illustrations could be used in other fields to indicate the direction research might take. But I shall discuss briefly one more—the field of methodology. By and large research in this field has been loose, ineffectual, and unconvincing. For a number of years, I reviewed for the American Education Research Association all investigations in the field of English. By all odds the poorest research in all this field was to be found in the studies of method. However, much valuable research has been done in methods in reading, spelling, and arithmetic. Yet method is important, very important, and special attention is being given to it in recent years. It is insufficient to establish that deliberate attention to method results in more effective learning than casual planning, or that drill on detail produces learning which can be remembered temporarily in the form in which it was learned. More and more, method is being considered in relation to objectives and in any system is closely related to the prevailing theory of how learning takes place.

There are three kinds of methods that need the attention of research workers. First is the nature and climate of the group. This is an effective way of controlling behavior, we assume, for it tends to satisfy desires for status and human relations; it is a security center for children, a laboratory for adolescents, and an influence on attitudes and conduct at all ages. The assumptions I have just made have only partial proof. We need to know what influence the group exerts upon behavior and learning, and how to use the group to secure desirable goals. If the group is to be used as a vital factor, what constitutes an effective influential grouping for different people? Questions are unlimited here. To what extent shall we use the group to control individual behavior? Does such control conflict with the development of individuality?

The second method is the utilization of daily living experiences so that they are used to develop certain learnings. Normal group contacts can be used to develop or inhibit emotional security, for instance, or to develop respect or disrespect for differences. How direct shall such instruction be? As a method, what are the relative merits of permissive or directed counseling about daily experiences?

The third method is the planned program of instruction. Careful planning by the teacher, combined teacher-pupil planning, purposeful

selection of instructional materials, the definite arranging of laboratory experiences, trips, scheduled observations—these are methods by which learning takes place. How do they fit into the establishment of behavioral patterns?

Certain procedures too are receiving considerable attention—discussion, problem analysis, orientation to difference of opinion with the development of criteria by which to judge their validity, synthesis of related events and principles to develop understanding. These procedures differ considerably from the emphasis centered in years past on drill or direct questions or memorization. Research needs to be applied to the kinds of methods and to the procedures used to explore ideas.

Finally, we might mention the need for the application of method to the individuality of youth. There cannot be uniformity in learning among any group of youth. Grouping on certain common factors tends only to reduce certain diversities; it does not increase uniformity. The average child has been a personal myth toward which teachers have directed their instruction, but the sub-normal and the gifted are different people, possessing differences far more significant than is represented in an I. Q. Yet they are all citizens in a democracy, students in a universal school system facing common problems, believing in common principles, having faith in the same God and government and men, and sharing hope for a world offering justice and equal opportunity to all. To teach each to solve these problems by the use of materials pertinent to his experience and motives and by the use of methods consistent with his developmental potentials becomes a challenge to our universal system of education. Can research guide us in the differentiation of experience and knowledge and methods effective for the development of each individual?

## Challenge to Research

The objectives of our modern program of education require a different approach to research, an approach that is complicated and very difficult to achieve. Research to determine how well pupils have learned: 1) how to factor binomials, 2) how to distinguish noun clauses from adverbial clauses, 3) how to bandage a sprain, or 4) how to make sodium chloride, is quite different from that which calls for determining the extent to which young have: 1) acquired the skill of participating in group thinking and in resolving group conflicts, 2) motivated their own behavior by an accepted system of moral and spiritual values, 3) worked at the unfinished tasks of democracy, or 4) practiced democratic principles in community life.

Research on methods is different. Where once we sought to determine the: 1) validity of the whole or part method in learning poetry, 2) the use of phonics in increasing reading comprehension, 3) the relative

difficulty of long and short division, we now seek to discover the: 1) force of public opinion on conduct, 2) the impact of a democratic climate of group activity upon the acquisition of democratic principles, or 3) the extent of learning developed from casual daily experiences and from carefully selected and ordered experiences. Where once we sought to determine how to learn and remember the ten commandments, we now seek to discover the effect of the establishment of a norm in the development of a system of personal values.

Some have contended that when educators turn to philosophy and a discussion of values, education advances and prospers; when it turns to methods, educational progress stops. Some have contended that as long as educational issues are settled by rational argument and persuasion, progress results; that when they are settled by reference to proof and experimentation, education becomes static. I can see no reason why these generalizations are true or why they need to be true. Surely if no evaluation can be made of success or failure, the validity of an idea depends upon the logic and prestige of the one who advances it. There is no valid reason why research should advance the physical sciences and retard the social sciences. The complexity of man's mind calls for different techniques to be used to study his behavior from those used where variables can be carefully controlled, but there is no reason why, if research is harmonious with philosophical objectives, it cannot facilitate the learning process. But to do this, research workers must be ingenious and flexible enough to evaluate success or failure toward achievement of the goals society accepts for its people. I hope and believe that it can be done.

\* \* \* \* \*

## **C.E.R.A. Conference To Be Held At College of the Pacific**

The annual conference of the California Educational Research Association will be held at the College of the Pacific, Stockton, on March 20 and 21, 1953. As in the past, the conference will feature reports of research undertaken by California educators. The conference will begin with an evening session on Friday, March 20, and will continue through Saturday afternoon. Those desiring to participate in the conference program should contact Dr. Marc Jantzen, School of Education, College of the Pacific.

# Personality Assessment In The College Program

W. EDGAR GREGORY

College of the Pacific

MANY educators have been so impressed with the results of the Harvard "Explorations in Personality" (3) and the OSS "Assessment of Men" (4) that they have envisioned its extension into the college training program. At the first graduate Workshop in Personality Evaluation, held in the summer of 1950 on the campus of the College of the Pacific, the director commented that it was his dream that someday there would be a college giving as complete personality assessment to its students as technical knowledge permitted. He was sure, he added, that such a college would have employers and graduate schools waiting to receive its graduates—men and women about whom they could know specific and positive things. To his surprise, the students of the workshop were unanimous in saying that such a program should not be merely a dream but a goal toward which we were taking definite steps—a goal held definitely before us as a major aim of higher education.

Over the past few years the author has had some chance of helping to put such a program into action, limited though it be, and the above-mentioned workshop is but one aspect of it. Several factors color the program and put their own definite limits upon it and should be mentioned before the program in its present stage is presented and evaluated.

First of all, the psychology department at the College of the Pacific is part of the School of Education. It has, as a result of this status, some very specific ties to education which might not otherwise be the case. In the second place, one of the major courses of the Department of Psychology has always been the course in Mental Hygiene which was taught for many years by the Dean of the School of Education. It was found that there were really three rather diverse interests in those taking Mental Hygiene. The largest group was composed of those with personal problems for which they expected Mental Hygiene to furnish at least some of the answers. The second group was composed of young married individuals

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who hoped for some insight into their marriage problems and the adjustments of marriage. A third group (larger in Summer School than in the regular sessions) was composed of older people seeking help in understanding children—both as teachers and parents. A third major factor was the author's concern for the more intensive presentation of personality theory and assessment on the graduate level to non-psychologists (teachers, lawyers, ministers, business personnel people, etc.).

## Description of Assessment Program

Thus, out of the need for more data for guidance on credential recommendations, out of the need for a more positive and more personal mental hygiene program, and out of the need for giving non-psychology graduate students a better understanding of the psychology of personality grew the assessment program as it now stands. Briefly that program is as follows:

Each student in Mental Hygiene is asked to fill out the Lehner workbook *Explorations in Personal Adjustment*. (2) He is given a code number and assured that the material will be kept locked up with only the instructor having access to the file. Furthermore, he is assured that should the instructor leave the college, this material would be destroyed (or returned to the student in special cases). He is also told that this material will never be used by the instructor except for incidental research purposes in which anonymity will be assured—unless the student himself requests such use. Each student is entitled to interviews with the instructor on personal problems. If he requests such an interview, his workbook will be reviewed to make the interview as effective as possible. In view of the large numbers taking the course, personal interviews are not required. The student may also request the instructor to submit an assessment to any credential committee before whom he is appearing, or to write a summary of this material to a prospective employer if he desires. A surprisingly large number gave a voluntary written authorization to make such use in any way the instructor sees fit. These assurance, however, have been found necessary to gain the fullest cooperation from the student. Out of experiences to date, however, it is felt that there will be less and less resistance to such use as time goes on.

In addition to the workbook the students of Mental Hygiene also take a number of tests. The ones currently being given are:

1. A group TAT. Some elementary scoring is done in class but only the more pressing cases are more fully scored. The written stories are, however, filed with the workbooks and can be checked on as circumstances direct.
2. The *Allport-Vernon Study of Values*, self-scored in class.

3. The *Strong Vocational Interest Blank*, partially hand-scored in class. Individual students who so desire may pay to have the full test scored. Results are filed with their workbook as well as being furnished to them. Those only partially scored are filed in case circumstances should suggest further study.
4. The *University of California Public Opinion Questionnaire* to which *Religious Beliefs Scale* and *Chave Attitude Toward the Church* scale have been added. These are completely scored in class and the established norms presented. These results are also available but filed separately in a special research project.
5. The *Minnesota Multiphasic Personality Inventory*. At various times other tests have been given, but for various reasons discontinued.

A card file is kept in which the results of these tests and data of the workbook are summarized for each student, permitting a quick reference to the filed material and the workbook.

The Graduate Workshop in Personality Assessment is even more exhaustive. Each student takes a *Group Rorschach*, a group *TAT*, an *MMPI*, a *Study of Values*, a *Bernreuter Personality Inventory*, a *Strong Vocational Interest Test*, and a *General Aptitude Test Battery* as well as filling out the *Lehner* workbook. Supplementary information was recommended by the first Workshop students themselves—more detailed data on school life and on political background. Each student also submitted advance data on experience, training, and background before being admitted. He had an initial interview aimed at determining gaps in reading background, but also invaluable in the ultimate student personality assessment. In the course of a five-weeks workshop meeting three hours daily, the Director has invaluable opportunity for observations on personality. In the last week of the Workshop each student had a second extended interview aimed at bringing together all of this material in a systematic way (at the same time obtaining further information on aspects of personality still unclear or confusing). While the workbooks and tests are returned to the students of this workshop, a summary of the material is placed upon their cards in the permanent file.

As stated before, many of these students voluntarily agree to have this material used before the appropriate committees giving them guidance, but even where they do not, the instructor can often be of great help to the committee without revealing test data or personal data from the workbook. He quite often needs only to focus attention upon aspects of personality which the members of the committee themselves have had occasion to observe without noting its significance.

## Value of Program

This assessment program is, to be sure, far from adequate. The mere load of 100 students a semester for one instructor (who also has six other units of teaching to carry) would preclude the thorough assessment desired. The limitation of funds (as for scoring the *Strong* blanks) place other limits upon it. Nevertheless, we feel a significant start has been made and hope to see it extended in the future.

One of the questions, however, which inevitably arises is this: No adequate set of criteria have as yet been devised for determining who will be a good teacher and who will not. How then can assessment program whose primary concern with future teachers be of any value? Cronbach's observation on the Chicago study of Ph.D. candidates is pertinent here (1). He found that the *Rorschach* was of no practical value in determining who would write an acceptable thesis and who would not, but the tests were nevertheless very helpful in counseling with the candidate as to his own specific future plans. In other words, statistical criteria here are not possible. The important thing is the individual, the sort of job he will be happiest in, the community he can work most effectively in, the kind of leadership he will best respond to, etc. Such material as our current assessment program furnishes is just so much more data helping the counselor in dealing with such questions.

It is not pertinent here to discuss the relation of such an assessment program to the mental hygiene course itself or to the problem of a workshop in personality evaluation. These deserve treatment, but under different circumstances. Suffice it to say that the assessment program to date has proven an invaluable part of the material for both courses. As a matter of fact, we find it difficult now to think of teaching either of the courses without the use of such techniques.

Our experience to date leads us to believe such a program to be feasible in both teacher-education institutions and liberal arts colleges. Our own experience is but introductory and we look forward to the time when more funds and personnel are available and the student population has less suspicion of such a program. It will take several years to accomplish either, but the progress in these few years has been far better than any of us anticipated.

## BIBLIOGRAPHY

- (1) Cronbach, Lee J. "Personality in the research worker: observations on graduate students" (abstract). *American Psychologist*, 4: 274, 1949.
- (2) Lehner, George F. J. *Exploration in Personal Adjustment*. N.Y.: Prentice-Hall, 1948.
- (3) Murray, H. A. *Explorations in Personality*. N.Y.: Oxford University Press, 1938.
- (4) OSS Assessment Staff. *The Assessment of Men*. N.Y.: Rinehart & Co., 1948.

# The Effectiveness of Formal Spelling Instruction in High School

CHARLES B. WILLARD  
Southern Illinois University

HOW SHOULD spelling be taught in the high school grades? There is fairly unanimous belief that the actual teaching of spelling beyond the elementary years is desirable. At least, recent research in the spelling achievement of our high school graduates supports the common lay observation that the schools have still not mastered the problem of making good spellers out of their pupils. The Indiana studies of Fox and Eaton (1) demonstrates that weakness in spelling even at the elementary level is widespread. In his most recent evaluation of secondary school spelling, Ayer concludes that "the methods now used in high school spelling instruction are both varied and generally ineffective." (2) Hendrick's studies have made him similarly critical: "school children are *not* satisfactorily learning how to spell the words they actually use in all forms of their written expression . . . we have simply failed to teach children how to spell." (3)

As an answer to the spelling problem, these and other writers in the field have suggested use of improved spelling textbooks and the compilation of carefully prepared spelling lists closer to the needs of school children. There is considerable, but not complete, agreement as to the desirability of the continuation of formal spelling instruction into and through the high school years. The word *formal* is perhaps too severe. By it is meant regular classroom instruction in techniques of spelling, with pre-test, drill, and testing on the spelling of assigned words. Many teachers favor a method of incidental spelling instruction whereby the teaching almost completely individualized. The methods vary, however, from complete disregard of spelling teaching to formal lessons in spelling throughout the four years of secondary school.

In stressing the need for improved spelling lists for elementary grades, Hildreth comments that "spelling ordinarily receives little attention in high school or college." (4) That such disregard is the chief cause

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of spelling weakness is accepted by many writers, but some feel that spelling instruction in high school or in the eleventh or twelfth grades need not be formal. Dakin, for instance, believes that "Spelling should be taught . . . in each year of secondary school—directly in the junior high school and in the tenth grade, indirectly in the eleventh and twelfth." (5) Harris, on the other hand, finds that "there is a need for systematic instruction in all grades at the junior and senior high school levels." (6)

## Present Study

The experiment described in this paper was conducted to discover how effective a formal teaching procedure in spelling at the high school level actually is. Student teachers suggested the study when they expressed doubt as to the wisdom of using high school class time for spelling instruction. They were abetted by the pupils in one of the classes concerned who felt they could learn assigned spelling words without formal help from the teacher. Two matched sophomore classes were used. During the freshman year and the first twelve weeks of the sophomore year the pupils of both classes had experienced formal teaching of spelling in lessons approximating twenty minutes a week. Prior to the twelve-week experimental period one class expressed a desire to discontinue the formal spelling lesson which they considered a waste of time. The other group asked that the formal instruction be continued. The classes knew that records of their achievement in spelling were being kept and they were interested in the outcome. As a result of their having an opportunity to help decide how they would study their spelling, the classes seemed adequately motivated.

Although heterogeneously grouped, the classes were closely matched in all measurable characteristics that might affect success in learning to spell. There were 19 pupils in each group; Group A having a mean age of 15 years, 8 months, and Group B, 15 years, 9 months. The IQ scores of Group A ranged from 79 to 121 with a mean of 101 and a standard deviation of 12.8, while those of Group B ranged from 75 to 126 with a mean of 100 and a standard deviation of 12.9. Scores on reading ability tests were similarly parallel: Group A scores ranged from 6th grade, 7th month, to 13th grade, 9 month, with a mean of 10 grade, 2nd month (sigma—2 years, 3 months); Group B scores ranged from 6th grade, 7th month, to 14th grade, 4th month, with a mean of 10th grade, 3rd month (sigma—2 years, 7 months). The correlation coefficient of the IQ's of the two groups was .95. Within each group a high correlation existed between IQ and reading ability scores: in Group A the coefficient was .87; in Group B,  $r$  was .86.

## Procedure Used

The classes met five days a week for fifty minute periods, Group A at 8:00 a.m., Group B at 1:00 p.m. All spelling assignment, instruction, and testing were done by the same teacher, a supervisor in language arts. Group A studied spelling formally. The method of instruction followed recommended procedures for the teaching of an assigned list of words. Taken in order from a selected list in the English textbook used by the class, the words were with few exceptions words in common and frequent use which caused difficulty at the secondary school level. At the beginning of class each Wednesday, the teacher dictated ten new words to the class, using sentences and definitions to make sure each word was understood. The pupils then corrected their own pre-tests, and each word that had been misspelled was dwelt on for a minute or two. The difficult word was written on the board with class members indicating syllabication. Then pupils pointed out parts of the word that had puzzled them. The difficult letters were circled or underlined. Whenever a special rule or mnemonic device was relevant and practical, pupils recalled the rule or device with whatever teacher help was necessary. If the word was one a confusing pair or group of similar words, the other words were written on the board and necessary comparisons indicated. Pupils gave definitions and illustrative sentences whenever the words were not generally understood. Use of the dictionary was, of course, encouraged. Finally pupils spelled the word orally in concert without reference to the board and wrote the correct form on their papers.

This formal procedure usually took from fifteen to twenty minutes—seldom did the class need to discuss fully more than four or five words. Another five minutes were spent in re-teaching words misspelled in the final test of the previous week. The weekly test was given each Monday morning during the first five minutes of class. It consisted of twenty words dictated in sentences, the ten words studied the previous Wednesday (New Words) and ten words chosen from those that had proved difficult in previous tests (Old Words). Separate scores were kept for the New Words, the Old Words, and the Total on each weekly test, as well as for the Pre-test of New Words given to Group A. Pupils received their test papers during the lesson each Wednesday and had an opportunity to discuss their errors and to write the troublesome words in their lists of personal spelling demons in their notebooks.

Group B studied the same list of words at the same rate, but received relatively little aid from the teacher. The teacher assigned ten new words at the beginning of class each Wednesday. At the same time test papers on the previous week's assignment were returned and the teacher pointed out words that had been frequently misspelled. The test, identical with that given to Group A, was given at the beginning of class

each Monday. This group studied the words by themselves, but they were allowed and encouraged to do this in supervised study time during the class hour when they might receive individual help from the teacher.

## Results

The experiment continued for twelve weeks after which Group B pupils asked that formal instruction be resumed. Results of the experiment show formal spelling lessons produced total results 21 per cent better than the informal study. The differences in scores for the spelling of New Words and Old Words are perhaps more significant, however. Group A first spelled the New Words in a Pre-test; Group B first encountered them as the New Words on the final test each week. In the spelling of New Words on the final test, Group A achieved a mean score 18 per cent higher than that of Group B. But the mean of these New Word scores for Group B differs by only 5 per cent from the mean score achieved by Group A in the Pre-test. This would seem to indicate that both groups knew how to spell almost exactly the same number of new words presented each week. An analysis of the words misspelled in a single week indicates that the two groups found the same New Words difficult, but that the informal study of Group B failed to produce any learning of the difficult words. In one week, for example, the words *fascinate*, *crescent*, *parallel*, and *deceive* produced 38 errors on the Group A Pre-test, and 39 errors on the Group B test of New Words. But Group A, after formal instruction, made only 22 errors on these words on the test of New Words.

More important so far as significant learning is concerned are the scores achieved by the two groups on the weekly test of Old Words. The New Words test represented first an early recall of both easy and difficult words, whereas the Old Words test demanded a delayed recall of only words that had proved difficult in previous weeks. By formal study, Group A was enabled to retain their ability to spell these difficult words to a degree 25 per cent greater than that achieved by the informal study of Group B.

The formal teaching methods had proved 18 to 25 per cent more effective than the informal in increasing the mastery of new words and the retention of the ability to spell difficult words. The results of the experiment support Harris's conclusions that a very wide range of spelling achievement exists in any one grade, class, or age level, but that "a systematic approach to spelling instruction at high school and college levels usually produces significant improvement." (6) This improvement, however is in the ability to spell words actually studied. The data demonstrated no development of ability to spell new difficult words without going through the learning procedure. Pupils were baffled anew each week by the troublesome words. In each group there were good, average and poor

spellers, the ability to spell being rather closely related to intelligence. (The correlation between IQ's and Spelling Total scores was .68 for Group A, .69 for Group B.) But the good speller who misspelled one of the New Words on the first weekly test was still misspelling one New Word on the eleventh and twelfth tests; and the pupil who misspelled four or five words on the first test was misspelling four or five words on the last test. With few exceptions good spellers had good scores each week, poor speller did poorly each week.

## Conclusions

In summary, the experiment led to the following conclusions:

1. Formal spelling instruction in a heterogeneously grouped class resulted in at least an 18 per cent improvement in the ability to spell specified words.
2. Formal spelling instruction achieved results at least 18 per cent greater than informal instruction in the teaching of new words.
3. As demonstrated by tests given from one to twelve weeks after initial teaching, formal spelling instruction resulted in the ability to retain the spelling of difficult words at least 25 per cent greater than that achieved by informal methods.
4. A positive correlation existed between mental ability and achievement in spelling, but pupils of varied mental abilities improved their spelling ability through formal spelling instruction.
5. Although formal instruction increased the retention of words learned, it did not develop an ability to spell new difficult words without learning.
6. In general, pupils recognized the need for formal spelling instruction of some kind.

## BIBLIOGRAPHY

1. Fox, William H. and Eaton, M. T. "Analysis of the Spelling Proficiency of 82,833 Pupils in Grades 2 to 8 in 3,547 Teaching Units of the City Schools of Indiana." *Bulletin of the School of Education, Indiana University*, 22: 1-45, March, 1946.
2. Ayer, Fred C. "An Evaluation of High School Spelling." *The School Review*, 59: 235, April, 1951.
3. Hendricks, Jake J. *Generalization in Spelling with Special Reference to Methods*. Paper presented before the American Educational Research Association, Cleveland, Dec. 27, 1950. p. 1.
4. Hildreth, Gertrude. "An Evaluation of Spelling Word Lists and Vocabulary Studies." *Elementary School Journal*, 51: 264, Jan., 1951.
5. Dakin, Dorothy. *How to Teach High School English*. Boston: D. C. Heath & Co., p. 98.
6. Harris, Oliver E. "An Investigation of Spelling Achievement of Secondary School Pupils." *Educational Administration and Supervision*, 34: 217, April, 1948.

# Teacher Personnel Research\*

## 1. Considerations Relative to Research Design

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**W**HAT are the distinguishing characteristics of competent teaching? Unfortunately, no definitive answer to this important question can be provided by information presently available. Embarrassing as it may be for professional educators to admit it, relatively little progress has been made toward an adequate description of the requirements of competent teaching or the identification of the effective teacher.

Undoubtedly, good teaching has been recognized in all eras and cultures. Great teachers have been memorialized by history. And there probably are more competent teachers today than there have ever been—if for no other reason, because there are so many more teachers today than ever before. But usually we know little about these individuals, and therefore can not profit from understanding of their characteristics and typical modes of performance for the improvement of teacher training and teacher selection procedures. We do not know the qualities to look for in the effective teacher.

True, many persons have in mind some highly individual idea of what constitutes effective teaching. But these concepts frequently are of the nature of vague generalizations, far removed from specific observable behaviors of the teacher. And usually there is very little agreement among different individuals, even with regard to such hazy abstractions. One may be reminded of the old and familiar poem-fable of the blind men who perceived an elephant in such widely varying ways, depending upon the part of the elephant's body with which each came in contact. Educators are similarly blind professionally when it comes to describing competency in teaching. Some believe good teaching to be a function of having en-

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\*This is the first of two articles on *Teacher Personnel Research*. The second article will appear in the March issue of this Journal.

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rolled in certain college and university courses. Some believe it to be a matter of "pleasing personality" (definition of which varies widely, of course, from educator to educator). And some think it revealed in the discipline a teacher is able to maintain in the classroom. Many other similar examples, illustrative of criterion inadequacy and contamination, could be cited.

But in the final analysis we are forced to admit that our conclusions are very arbitrary and *a priori* in nature; that effective and ineffective teachers can not be identified with any assurance because little is known about *how* the various concepts of effective teaching actually are related to successful teaching in practice. And we cannot test the validity of our assumptions (nor can we test the validity of the hypotheses upon which our teacher training curricula are based) because we have little understanding, and no adequate measures, of the criteria of teacher effectiveness. As stated recently in the "Report of the Committee on the Criteria of Teacher Effectiveness" (American Educational Research Association): "To satisfy this need [for good teachers] we have created systems for the selection and training of persons for the teaching profession. We have devised training programs designed to develop these persons into the best teachers possible. We have set up procedures for supervision and training to improve teachers after they have gone to work. All this activity has, however, proceeded on a meager scientific foundation. We have used common sense, practical wisdom, intuition—that is, high hopes and deep conviction." (4, p. 238).

### Relativity and the Question of the Competent Teacher

As was suggested by the fable of the blind men and the elephant, the concepts we espouse are likely to vary from individual to individual. Individual A's concept of a "good" teacher depends, *first*, on individual A's past experience and the value attitudes he has come to accept and, *second*, on the aspect of teaching that may be foremost in his considerations at a given time. Pupil F may, therefore, differ widely from pupil G in what he thinks contributes to being an effective teacher. If pupil F is relatively bright and academic minded, and well adjusted personally, he may value most the teacher who is serious, rigorously academic, and relatively impersonal. If pupil G, on the other hand, is more sensitive, and study comes a little harder for him, he may find the teacher just described literally "impossible." In the mind of pupil G, the better teacher may very well be one who is basically weaker from an academic standpoint, but who demonstrates behaviors that may be referred to as sympathetic, friendly, understanding, and the like. Similarly principal X and principal Y, or parent M and parent N, or college professor Q and college professor R may consider quite different attributes in conceptualizing the effective teacher.

The answer to the question, "Who is a 'good' teacher?" also may vary with the particular kind of a teacher one chooses to consider. It does not seem unreasonable to hypothesize that teachers of different grades and subject matters might still vary considerably in characteristics and behaviors even if it were possible to objectify our thinking and place the definition of effective teaching on a strictly factual basis. The ultimate criteria of teacher effectiveness may be associated with quite different characteristics in elementary teachers, mathematics teachers in the secondary schools, high school English teachers, college teachers of large lecture courses, college laboratory instructors, and so on. Evidence of this sort has been suggested by a number of sources. The National Teacher Examination results of teachers of different grades and subject matters, for example, have consistently shown strikingly dissimilar profiles (5). With respect to knowledge of various areas of professional information, to the possession of certain mental abilities and basic language skills, and to understanding of general cultural materials, elementary teachers, physical science teachers, and English language and literature teachers show almost entirely different group patterns. It is evident that the teachers in these fields differ considerably with regard to intellectual and cultural backgrounds. Similarly, research conducted by the Teacher Characteristics Study into certain personal and social characteristics of teachers suggests that the combination of teacher behaviors and traits is not the same for elementary as for secondary school teachers, and that within the secondary school it is not the same for mathematics teachers as it is for English teachers. Interests, attitudes, and viewpoints differ with the milieu with which the teacher associates himself.

It is important, therefore, to remember that competent teaching probably is relative and perhaps, to a certain extent, situational. On the other hand, *there is* evidence to suggest that teachers and teaching situations *can* be classified into a limited number of relatively homogeneous groups. If the objectives of teaching, the functions of teachers, and the characteristics of teachers do possess some uniformity, the problem of definition of the effective teacher is not a hopeless one. The principal shortcoming at the present time is our lack of understanding of such homogeneous groupings of functions and characteristics and the unavailability of measuring devices that might enable us to analyze and study them.

### Functional Definition of the Effective Teacher

One of the first questions we might logically ask in considering the problem of competent teaching is, "Essentially, what determines whether or not a teacher is effective?" This should be fairly easy to answer. It is *teacher behavior*. Teacher behavior refers to the teacher's

*performance* of his or her functions. A second question thus immediately presents itself, "What *are* the functions of a teacher?" This answer becomes a little more difficult if we care to consider varying educational philosophies and viewpoints. Thinking in terms of minimum essentials and operational definition, however, a teacher might be described as one who *guides the learning or development of others*.

Some educators will point out at once that the teacher's responsibilities are broad in scope—that they include a wide range of curricular, extracurricular, and community functions. That probably is true. But all of these functions are important because they help the teacher to do a better job of guiding learning or development, both by increasing the teacher's understanding of people and their affairs through active participation, and by providing the pupils with an example, i.e., an opportunity to observe the teacher as a well-rounded individual and a citizen of the school and the community. A teacher might well be expected to participate in civic affairs just as would any good citizen in sharing the responsibilities of community life. But such participation is related to the essential character of teaching only to the extent that it enables the teacher to better perform the teaching functions as indicated, i.e., guiding the development of pupils.

It may be said, then, that teaching is effective to the extent that the teacher is able to provide ways and means that are favorable to the development of skills, understandings, work habits, desirable attitudes, and adequate personal adjustment on the part of the pupils or students.

## Criteria of Teacher Effectiveness

Having defined effective teaching functionally, we still have not considered *how* it may be determined whether or not a teacher is really doing the things required by the definition. How can the extent to which a teacher *is* influencing the behavior of the pupils be determined? What are the criteria of teacher effectiveness?

The writer considered this problem at some length in a paper presented several years ago (9) and more recently the Committee on the Criteria of Teacher Effectiveness of the American Educational Research Association has reported on pertinent aspects of the problem (4).

Briefly, the ultimate criteria against which we may judge whether or not a teacher is effective must be described in terms of observable effects of the teacher on his pupils, as indicated by (a) the pupils' subsequent life achievement and success (the attainment of happy and socially useful lives), or (b) the pupils' achievement in subsequent schooling, or (c) the pupils' current achievement of educational objectives. Certainly the most ultimate of these is the first—the achievement of life success. But criterion data of this sort are slow in their accumulation and difficult

to identify and measure. Somewhat more amenable to study are the pupils' achievements in subsequent schooling, and their current achievements. These are close behind "life achievement" in order of ultimacy—and all are adequate standards against which to judge "goodness" of teaching. In other words, whether a teacher is effective or ineffective is most properly inferred from the effects that teacher has produced, or helped to produce, in his pupils.

Certain more proximate criteria also may be employed in studying teacher effectiveness; criteria consisting of characteristics, or behaviors, of teachers that may be hypothesized to be related to more ultimate criteria. The teacher's intellectual abilities, general cultural background, background of professional information in education, personal adjustment, interest in children, sympathetic and understanding nature, business-like approach, attitude toward pupils, viewpoints on professional matters, and countless other teacher characteristics may be thought of as constituting such proximate criteria. These characteristics frequently are useful in describing the teacher. But it must be remembered that, useful as it may be for purely descriptive purposes, any such characteristic is acceptable as a criterion of teacher effectiveness only when it is *known* to be related to criteria that are based on pupil achievement. The A. E. R. A. Committee on the Criteria of Teacher Effectiveness thus has reported:

"Below the most ultimate criterion, any criterion must depend on the degree to which it can be considered related, relevant, or proximate to the ultimate criterion. For example, the teachers' intelligence is acceptable as a criterion only insofar as it is related to the teachers' effect on pupils' achievement and success in life. Similarly, the teachers' effect on pupils' satisfaction with the teacher may be considered acceptable only insofar as it is correlated with our most ultimate criterion. We may think, therefore, of a kind of regression from the ultimate criterion to lesser and lesser criteria, each depending for its standing on its relationship to criteria closer to the top" (4, p. 244).

At first glance it seems it should be a relatively simple matter to identify effective teachers in terms of pupil achievement. But any experienced teacher recognizes the invalidity of such an assumption and calls immediately to mind some of the conditions that help to confuse the issue. Intervening variables, in the form of characteristics of the pupils themselves, and other relevant variables such as socio-economic status of the community, size of the school, class size, and countless other factors also have their effects on the criteria (pupil achievement) and tend to obscure the teacher's contribution.

Just how intervening variables in the pupils, for example, affect the criterion data is by no means clear. We know that changes in a student's skills, understandings, attitudes, and the like are influenced by such factors as (a) his abilities and aptitudes, (b) his motivation (general, and also with respect to specific kinds of learning), and (c) the methods and techniques by way of which the learnings are presented or by which the student approaches them. Relatively little is known about the relationship of these factors or just how they affect learning in the classroom. We are pretty certain that with unselected samples of pupils, the three conditions are each fairly substantially correlated with pupils change. With a sample highly selected from the standpoint of a specified ability, however, it is probable that method of teaching may not be so important. And motivation is so variable with respect to different individuals, and with the same individual at different times, that it is difficult to arrive at generalizations with regard to it.

Then, there also is the question of just where the teacher enters into the picture in influencing such conditions of learning. The pupil's ability is something, for purposes of generalization at least, that is beyond the teachers control. The pupil's motivation is partly dependent upon the teacher, it is true, but there are numerable factors in the home and social environment that affect the pupil's purposes, goals, and interests. The third of the conditions of learning, method, is presumably within the teacher's control. But just how much influence the teacher may be expected to exert, and how important a part intervening variables may be expected to play in producing changes in pupil behavior is still a question that cannot be answered.

And change in pupil behavior may be produced by numerous influences in addition to those attributable directly either to the pupils' present teacher or to intervening pupil factors such as those noted above. The influences of previous teachers upon pupils' present behavior must not be overlooked. And, as noted earlier, other-than-teacher influences, both past and present, (e.g. neighborhood, parental factors, siblings, socio-economic status of the home, movies, television and radio, church, socio-civic agencies, etc.) are undoubtedly related to pupil achievement.

The problem is still further complicated by the possible latent effects of a teacher in producing change in pupil behavior. When does a given teacher's influence really take effect? Is it at the time a pupil is in the teacher's class, or may it be at some time after a pupil has left the particular teacher and has gone on to another teacher, or perhaps has left the school behind? To the extent that the effect of a teacher may be delayed, or latent, the measurement of such an effect at any given time is (a) contaminated by carry-over effects of previous teachers and (b) incomplete, because some of the present teacher's influence is still to be felt.

Moreover, the immediately observable effect of a teacher may be regarded as indication of that teacher's real effectiveness only to the extent that the changes produced have some degree of permanency. Transitory influence—apparent learning—may be of limited value as a criterion of a teacher's effectiveness.

The problem of the criteria of teacher effectiveness thus is a most complex one and one to which much careful thought relating to experimental design must be given if answers are to be uncovered. The A.E.R.A. committee previously referred to attempted to bring together current thinking about the problem in its 1952 report (4). Briefly, this report concluded:

- (1) The basic objective of research on teacher effectiveness is to relate teacher behaviors to the effects of those behaviors. The problem is one of predicting that a teacher *will produce certain* types and amounts of *changes in pupil behavior* (or, that a candidate for admission to a teacher education program *may be expected to produce certain changes in pupil behavior* when he later becomes a teacher).
- (2) Teacher effectiveness probably should be hypothesized in multi-dimensional terms that take into account the possibility of different patterns of effective teacher behaviors for different kinds of teachers, different kinds of pupils, and different kinds of educational situations.
- (3) The planning of research, and the analysis and interpretation of data, relative to teacher effectiveness must take into account the influence of other relevant variables (modifying or limiting factors) such as characteristics of the pupils, characteristics of the community, characteristics of the pupils' homes, characteristics of the school system in which the teacher is teaching, etc.
- (4) Research on teacher effectiveness requires the measurement of the independent, intervening, and dependent variables, and it can proceed only with the development of techniques for the measurement of (a) teacher behaviors, (b) the effects of intervening pupil and environmental factors, and (c) the effects of teacher behaviors produced in pupils.
- (5) The problem of teacher effectiveness, then, may be generalized as the attempt to answer the question, "*What kinds of teacher behaviors are most effective in producing behavior changes in what kinds of children in the direction of what educational objectives in what kinds of situations?*"

Because of the complexity of the problem, relatively few researches have been directed at the analysis of the relationship between teacher behaviors and the effects of those behaviors as revealed in pupil achievement. Although Barr (1) summarizes 138 investigations that have sought to predict teaching efficiency, only a small number, nineteen, were found that had employed pupil change of any kind as a criterion. Domas and Tiedeman (2) list over a thousand titles in their annotated bibliography on teacher competence, but only a few of the studies reported made any pretense of getting at the essential problem. This is not surprising, since research has been handicapped by the unavailability of measuring devices for most teacher behaviors and for all but a few pupil behaviors.

It should be noted that McCall (3) recently attacked the enigma of teacher effectiveness, employing measures of pupil change as a criterion, in his *Measurement of Teacher Merit* study conducted for the North Carolina Department of Public Instruction. Various teacher behaviors and certain conditions of teaching were studied in light of an overall criterion contributed to by a number of different kinds of pupil change. The sampling was not extensive, but the research is suggestive of ways of approaching the problem.

### Concluding Statement

Research, then, attempting to relate teacher behaviors to pupil behaviors (and in particular *changes in pupil behavior*) has been very limited. Few, if any, statistically reliable findings have been reported that help to answer the question, "What is the effective teacher like?" A number of factors undoubtedly have contributed to the failure to produce significant conclusions, chief among which are: (a) the complexity of experimental designs involved, and the extreme difficulty encountered in attempting to control relevant variables; (b) the likely multi-dimensionality of the problem; (c) the relative unavailability of measures of teacher behavior and of pupil behavior; and (d) the practical difficulties involved in obtaining the cooperation of school systems and teachers, and in administering a research program requiring repeated time-consuming measurement of large numbers of pupils.

More and more is being learned about certain teacher characteristics. Some reliable measures of pupil and teacher behaviors are being developed. And the criteria of teacher effectiveness, and experimental designs required for study of the problem, are coming to be better understood. But research that will provide answers to the question raised in the opening paragraph still remains to be undertaken.

### REFERENCES

1. Barr, A. S. "The Measurement and Prediction of Teaching Efficiency: A Summary of Investigations." *J. Experimental Education*, 16:203-83, June 1948.

2. Domas, S. J. and Tiedeman, D. V. "Teacher Competence: An Annotated Bibliography." *J. Experimental Education*, 19:101-218, Dec. 1950.
3. McCall, W. A. *Measurement of Teacher Merit*. Raleigh N. C., State Department of Public Instruction, 1952. 40 p.
4. Remmers, H. H., Barr, A. S., Bechdolt, B. V., Coxe, W. W., Gage, N. L., Orleans, J. S., and Ryans, D. G. "Report of the Committee on the Criteria of Teacher Effectiveness." *Review of Educational Research*, 22:238-263, June 1952.
5. Ryans, D. G. "Appraising Teacher Personnel." *J. Experimental Education*, 16: 1-30, Sept. 1947.
6. Ryans, D. G. *Comparing the Qualifications of Teachers*. (Teacher Selection Papers and Reports, No. 11) New York: American Council on Education, 1947. 27 p.
7. Ryans, D. G. "Notes on Teacher Selection: Sources of Information About Qualifications of the Candidate." *Educational Administration and Supervision*. 32:333-342, 1946.
8. Ryans, D. G. "Procedures Employed in Teacher Selection." *The Teachers College Journal*, 20: 58-9, 67-9, Jan. 1949.
9. Ryans, D. G. "The Criteria of Teaching Effectiveness." *J. Educational Research*, 42: 690-699, May 1949.

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"All thoughtful and conscientious Americans must be disturbed by the cloud of doubt that has been thrown over the profession by the irresponsible outcries of a few people. They are doing a disservice to their communities and to the nation at large for their ill-tempered and footless attacks on a group of persons who patriotically are dedicated to our country and the ideals of human freedom and decency for which it stands. There is no more loyal group of citizens in this country than educators. They will measure up in every respect with the members of other occupational groups, in particular those who have raised a hue and cry about 'loyalty'." (excerpt from address by Earl J. McGrath, U. S. commissioner of education, at the inauguration of William G. Carr as executive secretary of the National Education Association).

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"Amid the welter of apparently conflicting notions about the curriculum I believe I discern one unifying idea: Education for our children must be functional. I see interest in the functional in what has been happening in each of the subjectmatter areas we comprehend by the term, the three R's. The idea is not entirely new, but more and more it dominates our planning and our activities . . . Few parents know about this particular change in our point of view regarding the curriculum. If they knew about it—and understood it—they would probably subscribe to it. They would lessen the number and severity of their criticisms, they would be more charitable toward our failures, and they would tend to cooperate with us in achieving our purpose." (excerpts from article on "The Three R's in Today's Schools" by William A. Brownell, *NEA Journal*, September 1952, page 336).

# The Influence of Training in Reading In The Social Studies On The Ability To Think Critically

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THE development of critical abilities necessary to judge intelligently the personal, social, and public issues has long been a goal of public education. Numerous investigations have been made to determine the nature of the skills and abilities involved in critical thought and the methods by which they may be developed. In the course of these investigations, a close relationship between reading and critical thinking was indicated, but little was known or investigated of the nature of this relationship.

## Basic Hypotheses

It was the purpose of this study to investigate the influence of training in reading on the ability to think critically. On the basis of previous research, two hypotheses were formulated:

1. General training in reading in the social studies will produce significant gains in the ability to think critically; more specifically, a twenty-eight-week program designed to improve reading skills in social studies will result in significant total score gains on the *Watson-Glaser Critical Thinking Appraisal*.
2. Significant gains in critical thinking scores will be made by those subjects who show a "high" gain in reading skills; more specifically, those subjects who demonstrate a better than average improvement in reading skills, as measured by the *Progressive Achievement Test: Reading*, after the twenty-eight-week program designed to improve reading skills, will show a related improvement on the *Watson-Glaser Critical Appraisal*.

The two major problems of the study were set up to provide the data necessary to test the hypotheses. The three subordinate problems were derived from the second hypothesis to provide data for further interpretation of the gains made on the *Watson-Glaser Critical Thinking Appraisal* and to verify Glaser's findings on the relationship of intelligence and critical thinking ability.

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## Definitions Used

Critical thinking was defined as involving three things: (1) an attitude of being disposed to consider in a thoughtful way the problems and subjects that come within the range of one's experiences, (2) knowledge of the methods of logical inquiry and reasoning, and (3) some skill in applying those methods. The component abilities, such as recognizing problems, defining problems, recognizing unstated assumptions, recognizing logical relationships, and drawing conclusions, were given in detail. Gray's "Reading is the intelligent interpretation of printed symbols" was the definition of reading which was used. In addition, his analysis of the dimensions of the reading act was used as a basis for training and as an example of the overlap with critical thinking.

The literature which relates to the different aspects of the ability to think critically was reviewed. In particular, studies on the nature of the thinking process; age, sex, and reasoning ability; training to think critically and transfer of training; measurement of critical thinking ability; and the relationship between reading and critical thinking were reviewed and analyzed.

## Experimental Set-up

The experiment was conducted in one of the larger secondary schools in Los Angeles County. The core curriculum program in which this study was made is highly organized, well coordinated, and tightly scheduled. The school plant was greatly overcrowded. Because of these factors, it seemed wise to undertake a pilot study, using only the classes taught by the investigator.

Accordingly, two ninth grade core classes were given a battery of tests including the *Watson-Glaser Critical Thinking Appraisal*, the *Progressive Achievement Tests: Reading*, and the *California Test of Mental Maturity*. Just prior to the testing program, one class was designated experimental and one control. Criteria were established for pairing, and the individuals in the control group were matched with corresponding subjects in the experimental group on the basis of intelligence and reading ability. Thirty-one pairs were formed; twenty-four completed the training. Both groups followed the usual course of study, but the experimental group received additional training in reading.

The training in reading was based on an appraisal of student needs and attainments and on the criteria of the dimensions of the reading act. Of necessity, the program was functional, utilizing wherever possible the materials of the course. Special materials based on or related to course content were also developed for the experimental group. The special instruction averaged approximately two hours a week, out of a total of ten class hours per week, for twenty-eight weeks. In general, the methods and

procedures used were patterned after those suggested by W. S. Gray in *Reading in the High School and College*, Chapters Four and Eight.

At the end of twenty-eight weeks, the pupils in both groups were retested on reading and critical thinking, and their scores were analyzed. The statistical method employed was that of determining the difference between the means of two small correlated samples by working with the difference between paired scores, and obtaining the standard error of the mean difference without computing  $r$ . Then, the null hypothesis that there was no difference between the true means of the samples compared was set up. The probability that a value of  $t$  as large or larger than the obtained value could occur on the basis of chance was determined. Since the direction of the change in score was predicted by the hypotheses, a "one tail" test of significance was applicable. The null hypothesis was either rejected or accepted depending on the significance level determined.

## Findings

1. The mean gain in total score on the *Watson-Glaser Critical Thinking Appraisal* of the experimental group was significantly greater than the mean gain of the control group,  $P < .02$ .
2. The mean gain in total score on the *Watson-Glaser Critical Thinking Appraisal*, of those subjects in the experimental group who made a better than average improvement in reading skills, as measured by the *Progressive Achievement Test: Reading*, was significantly greater than the mean gain of the matched control subjects,  $P < .05$ .
3. The mean gain in *Test 1: Inference*, of those subjects in the experimental group who made a better than average improvement in reading skills, as measured by the *PAT: Reading*, was significantly greater than the mean gain of the matched control subjects,  $P < .02$ .
4. The mean gain in *Test 2: Recognition of Assumptions*, of those students in the experimental group who made a better than average improvement in reading skills, as measured by the *PAT: Reading*, was significantly greater than the mean gain of the matched control subjects,  $P < .02$ .
5. The mean gains in *Test 3: Deduction*, *Test 4: Interpretation*, and *Test 5: Evaluation of Arguments*, of those students in the experimental group who made a better than average improvement in reading skills, as measured by the *PAT: Reading*, were not significantly greater than the mean gains of the matched control subjects.
6. The mean I.Q. of those students in the experimental group who scored above the median on the initial testing on the *Watson-Glaser Critical Thinking Appraisal* was 111.54; the mean I.Q. of the experimental group was 107.46.
7. The mean I.Q. of those students in the experimental group who made a better than median gain on the retest with the *Watson-Glaser Critical Thinking Appraisal* was 105.17.

## Conclusions

These findings were interpreted with proper regard for the smallness of the sample and the following conclusions were drawn:

1. The data provisionally support the hypothesis that a twenty-eight-week program designed to improve reading skills in social studies will result in significant total score gains on the *Watson-Glaser Critical Thinking Appraisal*.

The data do not provide conclusive evidence that the significant gains were caused by the training in reading alone.

2. The data offer presumptive evidence to support the hypothesis that those subjects who demonstrate a better than average improvement in reading skills, as measured by the *PAT: Reading*, after the twenty-eight-week program designed to improve reading skills, will show a concomitant improvement on the *Watson-Glaser Critical Thinking Appraisal*.
3. The findings offer presumptive evidence that those students who made a better than average improvement in reading, as measured by the *PAT: Reading*, made concomitant gains in the ability to infer, as measured by the *Watson-Glaser Critical Thinking Appraisal*.
4. The findings offer presumptive evidence that those students who made a better than average improvement in reading, as measured by the *PAT: Reading*, made concomitant gains in the ability to recognize assumptions, as measured by the *Watson-Glaser Critical Thinking Appraisal*.
5. There is insufficient evidence to warrant the conclusions that the abilities to deduce, to interpret the soundness of conclusions, and to evaluate arguments, as measured by the *Watson-Glaser Critical Thinking Appraisal*, are not related to reading, for the null hypothesis, used to test the significance of the directional difference, cannot be proved, only rejected or accepted.
6. Those subjects with higher general intelligence tended to score higher on the initial testing with the *Watson-Glaser Critical Thinking Appraisal*.
7. Those subjects at the extremes of the distribution of intelligence test scores, for the experimental group, constituted the great majority of the subjects who made more than a median improvement on the *Watson-Glaser Critical Thinking Appraisal*. The training in reading has a tendency to help those at the extremes of the distribution of intelligence test scores, indicating that such training may be profitably used within a wide range of ability.
8. The *Watson-Glaser Critical Thinking Appraisal* appears to be a measure of reading ability, as reading was defined in this study. The results of this experiment raise the question of whether this test can be used to measure critical thinking as something apart from reading ability.

## Recommendations

Certain recommendations, tenable as working hypotheses for school practice, can be made as the result of this study:

1. Significant gains in the more mature types of interpretation, critical reaction, reasoning, and integration involved in efficient reading in the content fields can be made in a relatively short period of time by secondary school pupils as the result of a properly designed developmental reading program.
2. Significant gains in logical reasoning and critical judgment of written materials, as measured by the *Watson-Glaser Critical Thinking Appraisal*, or similar tests, can be achieved as the result of a properly designed developmental reading program in the content fields.
3. Tests of critical thinking, such as the *Watson-Glaser Critical Thinking Appraisal*, can be used with secondary school pupils to measure reading ability, particularly those abilities involved in "critical reading."
4. Secondary school pupils of all ability levels can profit from training in reading and will show concomitant improvement in critical thinking if the training in reading is properly designed.

# Cross-Validation of A Study Methods Test

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## Introduction

How well can school achievement be predicted on the basis of study technique? Interest in this problem has continued since the time of Binet, who provided a clear and forceful statement of the fact that intelligence is not the sole determiner of school achievement. According to Binet, attitudes and methods of work have important effects upon accomplishment in school.

Surveys of studies, like that of Crawford and Burnham (6), usually show that the best single predictor of school achievement is a measure of previous school achievement. Such a measure reflects the effects of both intelligence and habits of work. However, in the attempt to extend understanding and control, the use of more analytic procedures seems desirable. The present study is concerned with prediction of school achievement on the basis of measured aspects of study technique.

The use of a study methods test in forecasting school achievement has a special educational significance. It does not imply fatalistic acceptance of a relatively unchangeable state of affairs; instead, it involves the assumption that methods of study may be taught, with consequent improvement of school achievement. Although such views are to be qualified in the light of research, they lead to an optimistic attitude regarding the determiners of scholastic accomplishment.

## Method and Procedure

1. *The Study Methods Test.* Suggestions as to effective methods of study were collected from many sources, including books on learning theory and reports of psychological experiments. Changing these suggestions into questions provided the items for the study methods test. A sample question is, "When you are studying, do you spend some time in

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reciting to yourself?" The test contained 130 such questions. The student taking the test reported his responses in the categories: *Always, Usually, Sometimes, Rarely, and Never.*

2. *The Scoring Keys.* Keys for scoring the test were made by contrasting the responses of good and poor students. This was done separately for high school and college groups. At each educational level about five hundred pupils were tested; the criterion groups consisted of the top 100 and the bottom 100 selected on the basis of achievement records. Item analysis resulted in elimination of many items which did not discriminate. Repeated application of this technique, as reported in several publications (3, 4, 5), has resulted in collection of 130 effective items in the test used in the present study. Scoring keys are given weights ranging from plus six through zero to minus six, depending upon the statistical significance of the difference in responses from good and poor students. These scoring keys were developed from criterion groups tested prior to 1950.

3. *Extension to New Groups.* The present report is based upon application of the test to new groups, tested in 1951. The question is, "How good is the prediction with these new groups?"

## Results

1. *College Level.* The test was first applied to 130 students in a large class in educational psychology. Table I presents the statistical findings. Achievement was measured by a mid-term examination consisting of 80 objective test questions. Although the class was somewhat larger, there were only 130 students who took the mid-term (required), the intelligence test (optional), and the study methods test (optional).

As indicated in Table I, the prediction of mid-term marks on the basis of the study test is about the same as that on the basis of the intelligence test. Both correlations are depressed somewhat by the limited range of the variables. The students in educational psychology, being upper division college students, are superior in intelligence and in study methods. They have survived a selective process. Nevertheless, the individual differences in achievement which remain among them can be predicted, as indicated by correlations of about .40, by measured intelligence or by measured differences in responses to questions about how they study.

The partial correlation between the study methods test and the mid-term test, holding ACE score constant, is .29. The other partial correlation between the ACE score and the mid-term test, holding study test score constant, is .26. The multiple correlation between the mid-term marks and the best weighted combination of the other two tests is .43. In

Table I

Intercorrelations between scores on a mid-term examination, the American Council on Education Psychological Test, and a study methods test for a group of 130 students in Educational Psychology.

	A. C. E. Total (1)	Study Test Score (2)	Mid-Term Test Score (3)
(1) A. C. E. Total		.39	.38
(2) Study Test			.40

this instance, the multiple regression equation gives slightly greater weight to the study test than to the intelligence test.

This is one of many such comparisons which have been made. In reference to more extensive data, three specific points should be mentioned. First, the American Council test provides better prediction in this situation than any of the four or five other intelligence tests which have been used. Second, the prediction by the American Council test is usually slightly better than that by the study test. Third, the prediction is limited somewhat by imperfect reliability of the mid-term examination.

## 2. Results From a High School Group

Data were obtained by administering the Study Methods Test to 129 seniors in a college preparatory high school. Grade point averages were computed for these students from their permanent record cards. The results of correlation analysis are shown in Table II.

As shown in Table II, a grade point average for these pupils based upon results for one semester correlates .88 with a similar grade point average based upon records for the following term. This is taken as evidence of the reliability of the grade point average. The correlation of scores on the study methods test with the grade point averages for these pupils is .60 for the whole year, and slightly lower for either semester taken alone.

Table II

Reliability of a grade point average, and its correlation with scores on a study methods test, for a group of 129 high school seniors.

Correlation with:	Spring 1950 G. P. A.	Study Test Score
Fall 1949 G. P. A.	.88	.57
Spring 1950 G. P. A.		.54
Average G. P. A.		.60

These results show that the study methods test will predict achievement in this type of high school rather well. For comparable groups, the reliability of the Study Methods Test is fairly high. Computing the reliability by the split-half method, coefficients of .89 (for 121 eleventh-grade students) and .87 (for 109 ninth-grade students) were found for groups in this same high school. Reliability coefficients for college groups are typically about ten points lower. The higher correlations between the study test and the achievement records for high school groups as compared with college groups are in part a reflection of the greater reliability of the tests when used at the high school level. This in turn is due no doubt largely to the selected nature of the college groups. In other words, the higher correlations at the high school level are attributed in part to the fact that the high school pupils show more variation in intelligence, in scholastic drive, in study methods, and in excellence of achievement.

For this particular high school group, no adequate measure of intelligence is available at this time. One may note, however, that the school is in a favored district, where the mean IQ is no doubt above 110, and the range of IQ's is probably considerably restricted. The lack of intelligence test data is regrettable; in later studies the desirable additional comparisons will be provided.

## Discussion and Interpretation

The fact that this report deals with samples not included in the standardization of the scoring keys is worthy of emphasis. The real evidence of validity lies in the results, as reported here, for completely new groups.

Some shrinkage in the correlations might result if the studies were extended to include groups different in social and cultural backgrounds. For example, lower correlations might result if the tests were used in another state, in different types of high schools and colleges. On the other hand, it is likely that higher correlations would be found with groups of pupils of high ability in a school or college where there is greater variation in academic drive. Davis has indicated that different social classes differ greatly in their motivation toward school work. (7) The results reported here were obtained in a high school where there is much emphasis upon scholarship, and in a university department where the students typically work hard.

The differences associated with educational level are obvious and representative. The same study test items have heavier scoring weights at the high school level than at the college level. The range of scores is greater for high school pupils than for college students. It is clear that the range of variation in excellence of study methods is greater at the high school level than in the upper division of the university. This sug-

gests that instruction in correct methods of study might be most effective at the high school level.

Some theoretical significance may be attached to the general finding that scores on a self-report test of study methods yields relatively good prediction of scholastic achievement. It is clear, although the study test correlates positively with the intelligence test, that each makes an independent contribution to the prediction of scholarship. In the use of the intelligence test, however, cognitive performance is used to predict cognitive performance. In the other case, using the study methods test, a measure involving affective and conative variables yields apparently equally good prediction of achievement.

## Summary and Conclusions

Questions concerning aspects of study technique were collected from many sources and combined into a test for high school and college students. A key for the test was made by contrasting the responses of high-achieving and low-achieving pupils at the college level. A similar key was made at the high school level. The test was then applied to new groups, completely independent of the standardization groups. Evidence of the validity of the test for prediction of achievement is presented.

The following conclusions are tentatively offered:

1. The study methods test is about as reliable as a good group intelligence test.

2. The study methods test, which can be administered in less than an hour, predicts achievement about as well as the best one of several intelligence tests.

3. Either type of test gives better prediction of achievement at the high school level than at the college level.

## REFERENCES

1. Binet, A., and Simon, T. "Le developpement de l'intelligence chez les enfants." *Ann Psychol.*, 1908, 14:1-94. (See page 75.)
2. Bird, C., and Bird, D. M. *Learning More by Effective Study*. New York: Appleton-Century Co., 1945. 275 p.
3. Carter, H. D. "Methods of learning as factors in the prediction of school success." *The Journal of Psychology*, 26: 249-258, July 1948.
4. Carter, H. D. "Correlations between intelligence tests, study methods tests, and marks in a college course." *The Journal of Psychology*, 30: 333-340, October 1950.
5. Carter, H. D. "What are some of the basic problems in analysis of study techniques?" *California Journal of Educational Research*, 2:170-174, September 1951.
6. Crawford, A. B., and Burnham, P. S. *Forecasting College Achievement*. New Haven: Yale University Press, 1946. 291 p.
7. Davis, Allison. *Social-Class Influences Upon Learning*. Cambridge: Harvard University Press, 1948. 100 p.
8. National Society for the Study of Education. *The Psychology of Learning*. 41st Yearbook of the Society, Part II. Bloomington, Ill.: Public School Publishing Company, 1942. 502 p.

# Peer Status As Related To Measures of Personality

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IN THE broad field of personality assessment, yardsticks of various dimensions are utilized to tab samples of behavior purporting to reveal the personality of the subject. As is commonly known to teachers, the personality of the youngster is also revealed in the type of behavior being exhibited by him and in the interpersonal relationships within the group structure in the classroom. In the present study, an attempt has been made not only to use various yardsticks, but also to view a child's behavior thru the eyes of his peers, using sociometric data in conjunction with psychometric measures for a further understanding of the personality of a given youngster.

The definition of the status of a given child was the degree of acceptance he was accorded by his classmates, his peers. As stated by Kimball Young (1):

Status is the position, the standing, accorded the individual within the group by his fellows. It does not imply high standing only, but *position* along the social scale . . . Status is one's resultant place on the prestige scale.

## The Problem

In pursuing the variable "peer status" or group acceptance of a given child, the problem as developed in this exploratory study became twofold: Could a relationship be found between measurable attributes of personality and peer status? Could a relationship be ascertained between a child's acceptance by his group and the degree of acceptance he accords to others?

## Research Techniques

Thirty children of a fifth grade classroom served as the subjects for all data collected by sociometric, psychometric and projective measures. They were not selected by any sampling methods to represent the wider school population, and therefore no attempt was made to generalize to the population at large.

The chronological ages of the thirty subjects ranged from 9-5 to 12-3. The girls outnumbered the boys, eighteen to twelve. The IQ's

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on a group intelligence test ranged from 79 to 126. In socio-economic status, it was judged that the group that fitted the "moderae" level.

In order to view the youngster through the eyes of his group, three "near-sociometric" measures were administered: The *Ohio Recognition Scale* (2), *Ohio Acceptance Scale* (3), and Young's seven criteria (4).

The following three psychometric group tests were used as gross yardsticks tapping aspects of personality: *California Test of Personality* (5), *Brown's Personality Inventory for Children* (6), and *Carl Roger's Test of Personality Adjustment* (7).

In order to ascertain whether a relationship was present between a child's acceptance by the group and the degree of acceptance he accords to others, the following projective measures were used: A group administration of eleven of the *Thematic Appreciation Cards*, partly based upon a study reported by Rautman and Brower (8). The specific cards used were: 3BM; 4; 8 BM; 15; 17 BM (as in the Rautman and Brower study) and the following six cards, as suggested by Klopfer: 1; 2; 9GF; 11; 18GF; and 18 BM.

The specific instructions were taken from Rapaport (9) with the use of the blackboard to emphasize the three features wanted for each picture: What is happening? How are they feeling? How will it end? A writing period of five minutes was allowed for each picture.

The *Rorschach Test of Personality* was the only test individually administered to each subject. All ten of the cards were used, following Klopfer's method (10).

## Findings

After computing Pearson correlation coefficients, it was found that all three measures were apparently tapping sociometric status as defined by the authors of "near-sociometric" tests and the separate scores were combined for greater reliability. It was possible to obtain a standard unit of sociometric status, which, in terms of the score each subject earned, was used to rank the subjects according to the degree of acceptance extended him by the members of the group. Hence in the ensuing comparison of the results in regard to psychometric and projective material, the standard scores of derived sociometric status were used.

It was hoped that the scores earned on the three group tests of personality would bear a relationship to each other, so that a total psychometric score might be correlated with a given child's derived sociometric score. The degree of relationship between these tests was studied by means of the Pearson product-moment coefficient of correlation. The low and negative findings indicated that different aspects of personality were measured by these instruments.

Using the rationale advanced by each author concerning the specific components of his test, the various sub-scores were then com-

pared with each subject's sociometric score. In all, twenty-six correlations were computed. With one exception, low and negative correlations were found, which indicated no relationship was present between the various aspects of personality measured by these instruments and degree of acceptance a child was accorded by his peers.

To ascertain the relationship between a child's acceptance by his group and the degree of acceptance he accords to others, a rationale of acceptance on a manifest level was derived to record to the responses obtained on the *Thematic Appreciation Test* and the *Rorschach*. One end of this scale was thought of as warmth expressed in inter-personal relationships in actions and toward the environment; the other end of the scale that of explicit, overt rejection of humans, objects, or the environment. It was assumed the underlying rationale of an acceptance continuum was clinically acceptable, and the overt responses of the subjects to the *T. A. T.* and the *Rorschach* were scored in this manner.

To answer the question as to whether scores earned on the *Rorschach* and the *T. A. T.* could be combined for greater reliability, Pearson correlation coefficient was computed between the total scores of each test. The  $r$  found,  $-.34$ , appeared to indicate that it was not possible to combine the scores, since no significant relationship was found. That is, though the same scoring criteria of acceptance on a manifest level was used on both tests to procure each projective score, it was found that apparently differing aspects of personality were measured by these two instruments. Therefore, Pearson correlation coefficient was computed separately between *T. A. T.* acceptance score and each subject's derived sociometric score, and also in the case of the *Rorschach*. In both instances, negative and very low correlations were found. It can be said that no relationship was found between the scoring criteria of acceptance on a manifest level, and a subject's sociometric score. It was not ascertained whether the lack of relationship was due to: 1) the crudeness of the scoring categories of acceptance; 2) the use of responses to this stimuli on a manifest level; or 3) that subjective "acceptance" does not correlate with acceptance of that youngster by others.

## Conclusions

- 1) It was found possible to combine the results of three "near-sociometric" tests for greater reliability in procuring a measurement of sociometric status.
- 2) It was found that the *California Test of Personality*, *Brown Personality Inventory for Children*, and *Roger's Test of Personality Adjustment* did not measure the same aspects of personality.
- 3) Further, neither the totals earned on these tests, nor any of the components of the tests, was found to be related to sociometric status.
- 4) It was found that an hypothesis concerning overt responses to pro-

jective material, and scored on an acceptance continuum, bore no relationship to sociometric status. That is, no relationship was found in the overt responses concerning acceptance as projected by the subject and that extended him by members of his group as seen in the sociometric status of the subject.

5) The negative correlation found between the projective acceptance score earned on the *Rorschach* and the score earned on the *T. A. T.* suggested that different aspects of personality were apparently measured by these two projective tests.

6) No evidence was found that indicated "adjustment" or "maladjustment," as measured by tests of personality used in this study, bore a relationship to the degree of acceptance accorded a given child by his peers.

7) In a comparison of results of this investigation with previous studies, no confirmation was found that general intelligence, reading achievement, or socio-economic background, bore a relationship to peer status. The results of this investigation confirm those of other studies in which low and negative correlations were found in comparisons between low sociometric status and scores of "maladjustment" or "abnormality" derived from personality tests.

## Recommendations

Three specific recommendations for research concerning peer status appear as an outgrowth of the present exploratory study:

1) A further extension of the use of projective measures should be made, beyond that of the manifest level. It may be that a clinical interpretation of all the responses made to the stimuli material would reveal a clue to the relationship between the personality of the subject and the status accorded him by his peers.

2) To ascertain whether component, "Freedom from nervous symptoms" on the *California Test of Personality* is related to sociometric status, it is recommended that sociometric measures and the *California Test of Personality* be administered to a sufficient number of subject to give a valid answer to the question.

3) Based upon the notation of the behavior of subjects low in status, it appears that direct observation of overt behavior exhibited in the classroom by children may reveal some of the dynamics of human inter-relationships that play a role in status within a group. It may be that a child's response of outer stimulation, as seen by his behavior exhibited in the classroom and playground, has a direct influence on the extent of acceptance he is accorded by his peers.

## BIBLIOGRAPHY

1. Young, Kimball, *Personality and Problems of Adjustment*. N.Y.: F. S. Crofts, 1946. 868 p.
2. The *Ohio Recognition Scale* (For Intermediate Grades) Issued by Ohio Scholar-

- ship Tests and Elementary Supervision, State Department of Education, Columbus, Ohio.
3. The *Ohio Acceptance Scale* (For Intermediate Grades) Issued by Ohio Scholarship Tests and Elementary Supervision, State Department of Education, Columbus, Ohio.
  4. Young, L. "Sociometric and Related Techniques for Appraising Social Status in an Elementary School," *Sociometry* 10: 168-177, May, 1947.
  5. *California Test of Personality*. California Test Bureau, Los Angeles 28, California.
  6. *Brown Personality Inventory for Children*, Psychological Corporation, New York.
  7. Rogers, Carl. *A Test of Personality Adjustment*. Association Press, New York.
  8. Rautman, A. L. and Brower, Edna. "War Themes in Children's Stories," *Journal of Psychology*, 19: 191-202, 1945.
  9. Rapaport, David. *Diagnostic Psychological Testing*. (Volume 2.) Chicago: Year Book Publishers, 1945.
  10. Klopfer, Bruno. *The Rorschach Technique*. Yonkers-on-Hudson, New York: World Book Company, 1946.

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## Fourth Annual State Conference On Educational Research

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THE FOURTH Annual State Conference on Educational Research, sponsored jointly by the State Advisory Council on Educational Research and California Teachers Association, was held in the Lemington Hotel, Oakland, on November 7 and 8. The theme of the 1952 Conference was "Improving Our Schools: Challenges to Research." The program was arranged by a committee of which Jean D. Grambs and Lucien Kinney, both of Stanford University, served as co-chairmen. An estimated 175 persons attended the Conference.

At the first general session on Friday morning, greetings were extended by Selmer Berg, superintendent of the Oakland City Schools, by Henry W. Magnuson, chief of the Bureau of Education Research, State Department of Education, and by Frank W. Parr, chairman of the State Advisory Council on Educational Research, and director of Research of the California Teachers Association. The first address of the Conference on the topic "Changing Objectives and Their Implications for Research."<sup>1</sup> was presented by J. Paul Leonard, president of San Francisco State College. Following the address, a symposium discussed "Current Examples of Research at Work" in four areas: Eugene I. Johnson, San Bernardino Valley Junior College, spoke on "Evaluating Community Forces" and cited his experiences in conducting an investigation in the Fall River

<sup>1</sup> President Leonard's address appears on pages 3-9 in this issue of the *Journal*.

Unified School District; C. W. Hunnicut, Syracuse University, presented some pertinent facts relative to the problem of evaluating the curriculum; Katharine Dresden, Chico State College, described some experiences in evaluating techniques; and Merle Elliott, Oakland City Schools, outlined some problems of teaching on which research information is available and indicated needs for further research in this area.

## Conference Luncheon

The Conference Luncheon was presided over by Kenneth R. Brown, assistant director of research, California Teachers Association. After an introduction of distinguished guests, Ernest R. Hilgard, dean of the Graduate School at Stanford University, spoke on the subject, "Friendly Criticism of Educational Research: Is it Meeting the Challenges?"<sup>2</sup> Dean Hilgard defined three types of research and contended that there is a crying need for more fundamental research in education. He cited examples of each of the types of research and proposed that more of our efforts should suggest the nature of needed educational change.

## Section Meetings

On Friday afternoon seven section meetings were held. In addition to the seven chairmen, 42 persons served as consultants in the section meetings. The sections and their chairmen were:

- Section 1—Studies in Public Opinion and Attitude Formation Towards the Schools (Henry I. Weitzel, Pasadena City Schools)
- Section 2—Research on the Curriculum (Joseph Axelrod, San Francisco State College)
- Section 3—Research on Teaching Techniques and Teaching Effectiveness (Alfred C. Jensen, San Francisco State College)
- Section 4—Work Section on Developing Regional Test Norms (Merle Elliott, Oakland City Schools)
- Section 5—Cooperative Research on the Gifted Child (Lillie L. Bowman, San Francisco City Schools)
- Section 6—Research on School Holding Power (Morris Williams, San Francisco City Schools)
- Section 7—Planning Longitudinal Records and Pupil Growth Studies (Faith Smither, Santa Barbara County Schools)

The section meetings were scheduled to last for two hours, but several exceeded the time limit. Reports on each of the seven section meetings were presented by the recorders at the Saturday morning general session. Several of the reports included recommendations for action by California research personnel.

<sup>2</sup> Dean Hilgard's address will appear in a forthcoming issue of the *Journal*.

### Friday Evening Session

A second general session was held on Friday evening with an address by Thomas C. Holy, special consultant in higher education, University of California, Berkeley. Dr. Holy talked on the subject "Needed Research in the School Plant Field."<sup>3</sup> In addition to outlining the areas of needed research, he commended the State of California for the leadership it has shown in directing the school building program. According to Dr. Holy, there are many unsolved problems in the planning and construction of school plants. An extended period of discussion followed Dr. Holy's presentation.

### Final General Session

The final general session opened with five-minute reports on each of the seven section meetings. Following these, a symposium conducted by Professor Lawrence G. Thomas of Stanford University discussed the general topic, "What Further Evidence Do We Need?" Participating in the symposium were: William Briscoe, superintendent of the Santa Monica City Schools; Arthur P. Coladarci, School of Education, Stanford University; Walter S. Monroe, editor of *The Encyclopedia of Educational Research*, and professor-emeritus of the University of Illinois; Lloyd N. Morrisett, School of Education, University of California at Los Angeles; and William R. Rogers, professor of education, San Jose State College. Many suggestions were offered by the symposium for needed research.

It was announced that the 1953 Research Conference will be held on November 6 and 7 at the Mar Monte Hotel in Santa Barbara.

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<sup>3</sup>Dr. Holy's paper will be published in a forthcoming issue of the *Journal*.

Of particular concern to all persons interested in the child welfare field is a one-year study being made of shelter and detention care for children under age 18 throughout the state of California. The study, which is being financed through the Rosenberg Foundation grant, will include an analysis of the respective purposes of detention and shelter care. It will show availability and adequacy of the services provided in each county and the use which is made of them. The method to be used will consist of personal interviews in each county with judges, probation officers, juvenile hall superintendents, law enforcement officers, county welfare directors, clinic directors, and executives of private agencies offering protective services. A battery of six schedules will be used, as well as direct observation of children in shelter and detention facilities. Mr. Sherwood Norman, a specialist in this field, is director of the study. His services have been made available by the National Probation and Parole Association. Headquarters for the California Study of Temporary Child Care will be Room 605, Homer Laughlin Bldg., 315 S. Broadway, Los Angeles 13.

# An Analysis Of General Elementary Credential Requirements in California State Colleges

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IT IS the purpose of this study to compare the general elementary credential requirement among the California State Colleges accredited by the California State Board of Education.

## Materials Used

The requirements and information as set forth in current bulletins of the colleges under study were used for determining the specific requirements of those institutions.

This use of the bulletins is rendered valid by the California Administrative Code requirements.

Any ambiguity was clarified by interview or correspondence.

## Colleges Studied

The institutions studied were Chico State College, Fresno State College, Humboldt State College, Los Angeles State College, Sacramento State College, San Diego State College, San Francisco State College, and San Jose State College.

## Procedure

The bulletins were analyzed for information concerning admission requirements, classification of students, matriculation tests, admission to the professional program, evaluation of candidates for the professional program, preparation in the fundamentals, course sequence, majors, minors, electives, and subject-matter requirements in the professional program.

Data were tabulated for each area of information. The tables compare the requirements or practices of each college in that area of information.

Two sets of tables were prepared from the data obtained in each subject-matter field. One set compares the semester units required by each

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college in the subject-matter. The second set shows the percentage the semester units of each course is of the total semester units required in the field at each institution. Ranges are shown. On the basis of eight colleges, averages are calculated for each course listed.

## Summary of Findings

1. The colleges agree closely on admission requirements for high school graduates and transfer students. There is some disagreement in requirements concerning special students.
2. Policies concerning classification of entering high school graduates differ among the institutions.
3. Requirements for admission to the professional programs are nearly uniform among the colleges. The colleges agree rather closely on the areas prescribed in the lower division. The units prescribed in the areas differ.
4. Methods of evaluating applicants for the professional program are largely uniform.
5. A planned sequence of courses is in operation at all institutions.
6. All colleges require evidence of preparation in the fundamental subjects.
7. Education is the required major in all colleges. The units required for the major differ widely.
8. The units required for a minor and the courses specified differ with the college and subject-matter field.
9. Two limitations on electives restrict the election to a prescribed field or to the completion of a minor. The total free elective units available are small in the programs of seven colleges.
10. All the colleges prescribe some work in art. Elementary School Art and Elementary School Crafts are required by fifty per cent or more of the colleges.
11. The total units required in the Education Department surpasses all work prescribed in other departments. There are nine courses common to the requirements of fifty per cent or more of the colleges. The balance of the program differs with the institution and the college's prescriptions among seventeen courses.
12. More than fifty per cent of the colleges require courses in composition, literature, and speech. The total units required in literature exceed those required in composition.
13. No foreign language is required by any college.
14. Three courses in the Health, Hygiene and Physical Education Department are required by fifty per cent or more of the colleges. The remaining prescriptions are designated by twenty-five per cent or less of the colleges.
15. Three colleges require courses in Industrial Arts.
16. One college requires a course in Elementary School Mathematics.
17. Two courses in Music are common to the requirements of fifty per cent or more of the colleges. Other courses designated are prescribed by twenty-five per cent or less of the colleges.
18. Two colleges require a course in Orientation.
19. All colleges require a course in General Psychology. The remaining courses are prescribed once.
20. Three of seven science courses are common to the requirements of fifty per cent or more of the colleges. One of the three courses is an elective. Biological sciences are prescribed more frequently and heavily than physical sciences.
21. Seventy-five per cent of the colleges have social science programs with fifty per cent or more of the program elective. Of nine specific courses named, only History of America is specified by more than one college.

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## Research News and Views

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A report of the Pasadena, California, School Survey is now available. Conducted as a cooperative study involving both a Citizens' Survey Committee and a Professional Advisory Committee, the survey is one of the most extensive of its kind. Directed by Clyde M. Hill, Yale University, and Lloyd N. Morrisett, University of California at Los Angeles, the survey was started in January 1951 and was completed last spring. The 939-page report covers 18 different topics which encompass all phases of school and community responsibilities and characteristics. In addition to describing in great detail the various policies and practices of the Pasadena schools, most of the chapters in the report definite recommendations to guide the actions of the school board. For those who do not have the time to read the complete report, an abridged edition entitled *Pasadena Faces The Future* is available.

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School boards will welcome a new booklet, *What to Pay Your Superintendent*, which has been published jointly by the American Association of School Administrators and the National School Boards Association. Since salaries paid to superintendents are a matter of contractual arrangement between school boards and their administrators, it was considered fitting that the two national associations should cooperate in setting forth guiding principles which determine superintendents' salaries. The 19-page booklet may be ordered from the AASA, 1201 16th Street, N.W., Washington 6, D. C.

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Educational Testing Service has announced the formal organization of its evaluation and advisory service under the direction of Paul Diederick of the ETS main office in Princeton, New Jersey. Mr. Diederick has had extensive experience in formulating testing programs, having recently completed a survey for the State of North Carolina which involved the planning of a statewide testing program to meet the particular needs of that area. The new service is an attempt to meet the need of schools for expert assistance in developing and interpreting testing programs. In charge of the evaluation and advisory service in the western area are Glenwood Walker, William C. Tanner, Jr., and Winifred S. Guild. They may be reached at 4641 Hollywood Blvd., Los Angeles, California.

One of the best symposiums to be found in modern literature on the subject of teachers' salaries and salary schedules is contained in the Spring 1952 issue of *The Harvard Educational Review*. Eight articles by prominent educators analyze most of the problems relating to teachers' salaries. Of special interest to school administrators and local salary committees are the following articles: (1) "The Nature of the Salary Problem" by Alfred D. Simpson; (2) "The Construction of Salary Schedules for Teachers" by Frank W. Hubbard and Hazel Davis; (3) "History of New York State's Approach to the Problems of Relating Teachers' Salaries to the Quality of Teaching Service" by J. Cayce Morrison, and "An Evaluation of the Attempts of Local School Systems in New York State to Include Competence Measures in Salary Schedules" by Dwight E. Beecher; and (4) "Relationship of Extra-Curricular Activities to Salaries" by James E. Allen, Jr. Copies of the *Review* are available and may be ordered by writing to Harvard University, Cambridge 38, Massachusetts. Price is one dollar.

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The extent to which television has captured the American people is indicated in a report in the October 1952 *Phi Delta Kappan*, page 33, which quotes from an article in *Platform*, September 1951. In less than five years, the American people have bought nearly 14 million TV sets, which serve about one-third of the nation's families. One out of every two families owns a TV set in Chicago, New York, and Los Angeles, and the figure for all TV areas is rapidly approaching this mark. Over 80% of home TV sets are turned on sometime during the average day. The average viewer watches from 2 to 3.5 hours a week, and four out of five owners watch television in the average day. The television program, according to the report, has an impact estimated to be anywhere from 3 to 20 times as great as radio.

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A recent publication of the U. S. Office of Education entitled "*Core Curriculum Development — Problems and Practices*" by Grace S. Wright pulls together a wealth of information and data concerning the core curriculum. The purpose of the publication (Bulletin 1952, No. 5) is "to describe more fully the nature of the programs which have the organizational structure of core; and to point to the problems which perplex administrators wishing to initiate or to extend the development of the core curriculum, and through illustrations of practice in schools which are moving forward with the program, to suggest ways of overcoming these problems." The bulletin was prepared for high school principals and teachers, but will be of interest also to research workers.

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## Research Question Box

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(The Research Question Box is a new feature and appears for the first time in this issue of the *Journal*. Whether it appears in subsequent issues depends upon reader reactions. Do you favor the idea of such a feature? If so, please send in your questions. They will be answered in the order in which they are received. Ed.)

**Question:** Is any material available to indicate how pupils in the schools of today compare in achievement with pupils of former days?

**Answer:** *Yes, but fragmentary. One of the best references among current literature is an article in the September 1952 issue of The Elementary School Journal: William S. Gray and William J. Iverson, "What Should be the Profession's Attitude Toward Lay Criticism of The Schools?", pages 1-44. Included in the article is a table summarizing ten comparative studies of reading achievement, some dating back as early as 1916. The conclusion drawn by the authors is that the median achievement in silent reading, as measured by the tests used, has not changed significantly during the last two or three decades.*

**Question:** Are there any recent studies on the criteria of good teaching?

**Answer:** *Yes. One of the most comprehensive is the "Teacher Characteristics Study" which is being directed by David G. Ryans at the University of California, Los Angeles. A partial report of this study, which is being sponsored by the American Council on Education and financed by the Grant Foundation, appears in this issue of the Journal (see pages 19 to 27). The report will be continued in the March issue. The reader is also referred to the recent report, Measurement of Teacher Merit, of the North Carolina study. The 40-page report, written by William A. McCall of Teachers College, Columbia University, may be obtained from the State Superintendent of Public Instruction, Raleigh, North Carolina. A third reference is a 28-page booklet, Measure of a Good Teacher, prepared by Lucien Kinney of Stanford University, and published by the California Teachers Association.*

